

# WEST Search History





DATE: Saturday, June 11, 2005

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L17	L16 and surface area	29
<input type="checkbox"/>	L16	L15 and (silica or alumina)	50
<input type="checkbox"/>	L15	L14 and synthesis gas	51
<input type="checkbox"/>	L14	l13 and fischer tropsch	58
<input type="checkbox"/>	L13	cobalt and promoter same (zirconium or chromium or magnesium or cerium or titanium) and binder and potassium	440
	<i>DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L12	L11 and potassium	1
<input type="checkbox"/>	L11	6130184.pn.	1
<input type="checkbox"/>	L10	L8 and group 1	0
<input type="checkbox"/>	L9	L8 and potassium	0
<input type="checkbox"/>	L8	5140050.pn.	1
<input type="checkbox"/>	L7	L1 and group	1
<input type="checkbox"/>	L6	L1 and group I	0
<input type="checkbox"/>	L5	L1 and potassium	0
<input type="checkbox"/>	L4	L1 and crystallite	1
<input type="checkbox"/>	L3	L2 and crystalite size	0
<input type="checkbox"/>	L2	L1 and surface area	1
<input type="checkbox"/>	L1	6124367.pn.	1

END OF SEARCH HISTORY

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NEWS	14 APR 04	EPFULL enhanced with additional patent information and new fields
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NEWS	20 MAY 23	REGISTRY has been enhanced with source information from CHEMCATS
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NEWS WWW		CAS World Wide Web Site (general information)

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	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE COVERS 1907 - 11 Jun 2005 VOL 142 ISS 25  
FILE LAST UPDATED: 10 Jun 2005 (20050610/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s cobalt and potassium and binder (l) (alumina or silica) and fischer tropsch and synthesis gas

- 351729 COBALT
  - 95 COBALTS
- 351732 COBALT
  - (COBALT OR COBALTS)
- 560836 POTASSIUM
  - 15 POTASSIUMS
- 560838 POTASSIUM
  - (POTASSIUM OR POTASSIUMS)
- 168771 BINDER
  - 80866 BINDERS
- 197215 BINDER
  - (BINDER OR BINDERS)
- 265206 ALUMINA
  - 2467 ALUMINAS
- 265475 ALUMINA
  - (ALUMINA OR ALUMINAS)
- 469818 SILICA
  - 3587 SILICAS
- 470219 SILICA
  - (SILICA OR SILICAS)
- 13015 BINDER (L) (ALUMINA OR SILICA)
- 22651 FISCHER
  - 15 FISCHERS
- 22663 FISCHER
  - (FISCHER OR FISCHERS)
- 7493 TROPSCH
- 7397 FISCHER TROPSCH
  - (FISCHER (W) TROPSCH)
- 1184785 SYNTHESIS
  - 3 SYNTHESISSES
- 64358 SYNTHESSES
- 1221074 SYNTHESIS

(SYNTHESIS OR SYNTHESISES OR SYNTHESSES)  
 1428855 GAS  
 488430 GASES  
 1603401 GAS  
 (GAS OR GASES)  
 15563 SYNTHESIS GAS  
 (SYNTHESIS(W)GAS)  
 L1 0 COBALT AND POTASSIUM AND BINDER (L) (ALUMINA OR SILICA) AND  
 FISCHER TROPSCH AND SYNTHESIS GAS

=> s cobalt and potassium and binder and (alumina or silica)

351729 COBALT  
 95 COBALTS  
 351732 COBALT  
 (COBALT OR COBALTS)  
 560836 POTASSIUM  
 15 POTASSIUMS  
 560838 POTASSIUM  
 (POTASSIUM OR POTASSIUMS)  
 168771 BINDER  
 80866 BINDERS  
 197215 BINDER  
 (BINDER OR BINDERS)  
 265206 ALUMINA  
 2467 ALUMINAS  
 265475 ALUMINA  
 (ALUMINA OR ALUMINAS)  
 469818 SILICA  
 3587 SILICAS  
 470219 SILICA  
 (SILICA OR SILICAS)

L2 105 COBALT AND POTASSIUM AND BINDER AND (ALUMINA OR SILICA)

=> s l2 and fischer tropsch

22651 FISCHER  
 15 FISCHERS  
 22663 FISCHER  
 (FISCHER OR FISCHERS)  
 7493 TROPSCH  
 7397 FISCHER TROPSCH  
 (FISCHER(W)TROPSCH)

L3 1 L2 AND FISCHER TROPSCH

=> d l3 ibib ab

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:565139 CAPLUS

DOCUMENT NUMBER: 141:74019

TITLE: Attrition resistant bulk metal catalysts and methods  
 of making and using same

INVENTOR(S): Espinoza, Rafael L.; Jothimurugesan, Kandaswamy; Raje,  
 Ajoy P.; Coy, Kevin L.; Srinivasan, Nithya

PATENT ASSIGNEE(S): Conocophillips Company, USA

SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004058401	A1	20040715	WO 2003-US40845	20031222
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,			
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,			
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,			
	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,			
	NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,			

TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,  
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004259960 A1 20041223 US 2003-743856 20031222  
PRIORITY APPLN. INFO.: US 2002-435043P P 20021220

AB According to a preferred embodiment, the present invention features a bulk catalyst that includes precipitated **cobalt** metal. The precipitated **cobalt** catalyst further includes a textural promoter, a **binder** and optionally a Group I metal. The method of making the catalyst is optimized so as to enhance attrition resistance and improve activity. According to some embodiments, the present catalyst is made by a method that includes one or a combination of: calcination under optimized temperature conditions; exposure to an acidic solution; and addition of a **binder** to a suspension of a precipitate. According to some embodiments, a **Fischer-Tropsch** process includes contacting the present catalyst with a feed stream containing carbon monoxide and hydrogen so as to produce hydrocarbons.

=> d his

(FILE 'HOME' ENTERED AT 13:59:19 ON 11 JUN 2005)

FILE 'CAPLUS' ENTERED AT 13:59:47 ON 11 JUN 2005

L1 0 S COBALT AND POTASSIUM AND BINDER (L) (ALUMINA OR SILICA) AND F  
L2 105 S COBALT AND POTASSIUM AND BINDER AND (ALUMINA OR SILICA)  
L3 1 S L2 AND FISCHER TROPSCH

=> s cobalt and potassium and binder and (alumina or silica or titania or zirconium)

351729 COBALT  
95 COBALTS  
351732 COBALT  
(COBALT OR COBALTS)  
560836 POTASSIUM  
15 POTASSIUMS  
560838 POTASSIUM  
(POTASSIUM OR POTASSIUMS)  
168771 BINDER  
80866 BINDERS  
197215 BINDER  
(BINDER OR BINDERS)  
265206 ALUMINA  
2467 ALUMINAS  
265475 ALUMINA  
(ALUMINA OR ALUMINAS)  
469818 SILICA  
3587 SILICAS  
470219 SILICA  
(SILICA OR SILICAS)  
76213 TITANIA  
42 TITANIAS  
76217 TITANIA  
(TITANIA OR TITANIAS)  
190365 ZIRCONIUM  
21 ZIRCONIUMS  
190368 ZIRCONIUM  
(ZIRCONIUM OR ZIRCONIUMS)  
L4 136 COBALT AND POTASSIUM AND BINDER AND (ALUMINA OR SILICA OR TITANI  
A OR ZIRCONIUM)

=> s l4 and fischer tropesch

22651 FISCHER  
15 FISCHERS  
22663 FISCHER  
(FISCHER OR FISCHERS)  
7493 TROPSCH

7397 FISCHER TROPSCH  
(FISCHER(W)TROPSCH)  
L5 2 L4 AND FISCHER TROPSCH

=> d 14 not 13  
L3 IS NOT VALID HERE  
For an explanation, enter "HELP DISPLAY".

=> s 14 not 13  
L6 135 L4 NOT L3

=> s 15 not 13  
L7 1 L5 NOT L3

=> d 17 ibib ab

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 2004:633256 CAPLUS  
DOCUMENT NUMBER: 141:159607  
TITLE: Combined cracking and selective hydrogen combustion  
for catalytic cracking  
INVENTOR(S): Ou, John D. Y.; Sangar, Neeraj  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ.; 15 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 5  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004152584	A1	20040805	US 2003-358569	20030205
US 2004152586	A1	20040805	US 2003-671281	20030924
WO 2004071656	A1	20040826	WO 2003-US30397	20030924

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,  
UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:  
US 2003-358564 A2 20030205  
US 2003-358569 A2 20030205  
US 2003-358977 A2 20030205  
US 2003-369880 A2 20030220

AB A catalyst system and process for combined cracking and selective hydrogen combustion of hydrocarbons are disclosed. The catalyst comprises: (1) at least one solid acid component, (2) at least one metal-based component comprised of (i) at least one of oxygen and sulfur (ii) one or more elements from Groups 5-15 of the Periodic Table of the Elements; and (iii) one or more elements from at least one of (a) Groups 1-2 and (b) Group 4; of the Periodic Table of the Elements; and (3) at least one of at least one support, at least one filler and at least one **binder**. The process is such that the yield of hydrogen is less than the yield of hydrogen when contacting the hydrocarbons with the solid acid component alone.

=> s bulk (1a) cobalt and binder and potassium and fischer tropsch  
270165 BULK  
820 BULKS  
270636 BULK  
(BULK OR BULKS)  
351729 COBALT

95 COBALTS  
 351732 COBALT  
     (COBALT OR COBALTS)  
 105 BULK (1A) COBALT  
 168771 BINDER  
 80866 BINDERS  
 197215 BINDER  
     (BINDER OR BINDERS)  
 560836 POTASSIUM  
     15 POTASSIUMS  
 560838 POTASSIUM  
     (POTASSIUM OR POTASSIUMS)  
 22651 FISCHER  
     15 FISCHERS  
 22663 FISCHER  
     (FISCHER OR FISCHERS)  
 7493 TROPSCH  
 7397 FISCHER TROPSCH  
     (FISCHER(W)TROPSCH)

L8           0 BULK (1A) COBALT AND BINDER AND POTASSIUM AND FISCHER TROPSCH

=> s bulk (1a) cobalt and potassium and fischer tropsch and (silica or alumina)

270165 BULK  
 820 BULKS  
 270636 BULK  
     (BULK OR BULKS)  
 351729 COBALT  
     95 COBALTS  
 351732 COBALT  
     (COBALT OR COBALTS)  
 105 BULK (1A) COBALT  
 560836 POTASSIUM  
     15 POTASSIUMS  
 560838 POTASSIUM  
     (POTASSIUM OR POTASSIUMS)  
 22651 FISCHER  
     15 FISCHERS  
 22663 FISCHER  
     (FISCHER OR FISCHERS)  
 7493 TROPSCH  
 7397 FISCHER TROPSCH  
     (FISCHER(W)TROPSCH)  
 469818 SILICA  
     3587 SILICAS  
 470219 SILICA  
     (SILICA OR SILICAS)  
 265206 ALUMINA  
     2467 ALUMINAS  
 265475 ALUMINA  
     (ALUMINA OR ALUMINAS)

L9           0 BULK (1A) COBALT AND POTASSIUM AND FISCHER TROPSCH AND (SILICA OR ALUMINA)

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NEWS	23	JUN 06	The Analysis Edition of STN Express with Discover! (Version 8.0 for Windows) now available
NEWS EXPRESS			JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
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NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

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=> file caplus

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FULL ESTIMATED COST	0.21	0.21

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FILE COVERS 1907 - 11 Jun 2005 VOL 142 ISS 25

FILE LAST UPDATED: 10 Jun 2005 (20050610/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s synthesis gas and hydrocarbon? and fischer tropsch

1184785 SYNTHESIS  
3 SYNTHESISES  
64358 SYNTHESES  
1221074 SYNTHESIS  
(SYNTHESIS OR SYNTHESISES OR SYNTHESES)  
1428855 GAS  
488430 GASES  
1603401 GAS  
(GAS OR GASES)  
15563 SYNTHESIS GAS  
(SYNTHESIS(W)GAS)  
490750 HYDROCARBON?  
22651 FISCHER  
15 FISCHERS  
22663 FISCHER  
(FISCHER OR FISCHERS)  
7493 TROPSCH  
7397 FISCHER TROPSCH  
(FISCHER(W)TROPSCH)

L1 1036 SYNTHESIS GAS AND HYDROCARBON? AND FISCHER TROPSCH

=> s l1 and cobalt

351729 COBALT  
95 COBALTS  
351732 COBALT  
(COBALT OR COBALTS)

L2 341 L1 AND COBALT

=> l2 and promoter (1) (zirconium or chromium or magnesium or cerium or titanium)

L2 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

```
=>.s l2 and promoter (l) (zirconium or chromium or magnesium or cerium or titanium)
160530 PROMOTER
53596 PROMOTERS
181731 PROMOTER
(PROMOTER OR PROMOTERS)
190365 ZIRCONIUM
21 ZIRCONIUMS
190368 ZIRCONIUM
(ZIRCONIUM OR ZIRCONIUMS)
344094 CHROMIUM
72 CHROMIUMS
344097 CHROMIUM
(CHROMIUM OR CHROMIUMS)
427410 MAGNESIUM
88 MAGNESIUMS
427444 MAGNESIUM
(MAGNESIUM OR MAGNESIUMS)
96541 CERIUM
3 CERIUMS
96541 CERIUM
(CERIUM OR CERIUMS)
439542 TITANIUM
78 TITANIUMS
439552 TITANIUM
(TITANIUM OR TITANIUMS)
2523 PROMOTER (L) (ZIRCONIUM OR CHROMIUM OR MAGNESIUM OR CERIUM OR
TITANIUM)
L3 13 L2 AND PROMOTER (L) (ZIRCONIUM OR CHROMIUM OR MAGNESIUM OR CERIU
M OR TITANIUM)
```

```
=> s l3 and (silica or alumina)
469818 SILICA
3587 SILICAS
470219 SILICA
(SILICA OR SILICAS)
265206 ALUMINA
2467 ALUMINAS
265475 ALUMINA
(ALUMINA OR ALUMINAS)
L4 6 L3 AND (SILICA OR ALUMINA)
```

```
=> d l3 ibib ab 1-13
```

```
L3 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:857201 CAPLUS
DOCUMENT NUMBER: 141:333945
TITLE: Fischer-Tropsch catalyst
production and a process for enhancing the activity of
the catalyst
INVENTOR(S): Malek, Andrzej M.; Leviness, Stephen C.; Trevino,
Horacio M.; Bell, Weldon K.; Marler, David O.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004204504	A1	20041014	US 2004-819378	20040406
WO 2004091787	A1	20041028	WO 2004-US11241	20040409
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,				
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,				

NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
 SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
 TD, TG

PRIORITY APPLN. INFO.: US 2003-462018P P 20030411  
 US 2004-819378 A 20040406

OTHER SOURCE(S): CASREACT 141:333945

AB A process for enhancing the activity of a **Fischer-Tropsch** catalyst metal particulate for hydrogenation reactions comprises calcining the particulate in an oxidant-containing atmospheric to partially oxidize it forming a porous layer of oxides on it surface, treating the calcined particulate with a solution capable of oxidizing the calcined metal particulate and comprising a compound of a hydrogenation catalyst metal to where the calcined metal particulate absorbs a volume of solution equal to at least about 10% of its calculated pore volume and activating it by treatment with a hydrogen-containing gas at elevated temps. forming a dispersed active metal catalyst. The treated particulate is calcined a second time under the same conditions as the first before final activation with a hydrogen-containing gas. The metal particulate is preferably sized after each calcination and any agglomerates larger than 250  $\mu$ m are comminuted to a desired size.

L3 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:528001 CAPLUS  
 DOCUMENT NUMBER: 140:255299  
 TITLE: Liquid-phase **Fischer-Tropsch**  
 process for the production of long-chain  
**hydrocarbons** from **synthesis**  
**gas**  
 INVENTOR(S): Koroleva, N. V.; Andriyanova, O. A.  
 PATENT ASSIGNEE(S): Russia  
 SOURCE: Russ., No pp. given  
 CODEN: RUXXE7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2205171	C1	20030527	RU 2001-127966	20011016
PRIORITY APPLN. INFO.:			RU 2001-127966	20011016

AB This process involves the use of a fine, spherical catalyst containing 91-98% of **cobalt** or iron oxides and one or several cocatalysts selected from molybdenum, **zirconium**, potassium, and copper oxides in amts. of 2-9% at 200-350°, a H<sub>2</sub>-CO molar ratio of 1-3:1, resp., and a hydrogen pressure of 1-5 MPa. The catalyst is prepared by copptn. of metal salts and one or several **promoters** initiated by adding 5-10% of a viscous organic phase to the aqueous solution

L3 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:392075 CAPLUS  
 DOCUMENT NUMBER: 134:368585  
 TITLE: Extended catalyst life **Fischer-Tropsch** process  
 INVENTOR(S): Beer, Gary L.; Leahy, James F.; Lisewsky, Greg A.;  
 McHugh, Kernan J.; Briscoe, Michael D.  
 PATENT ASSIGNEE(S): Syntroleum Corporation, USA  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6239184	B1	20010529	US 1999-401420	19990922
PRIORITY APPLN. INFO.:			US 1999-401420	19990922

AB A process for extending the life of a **Fischer-Tropsch** catalyst comprises converting **synthesis gas**, produced in an autothermal reactor by the substoichiometric oxidation of a light **hydrocarbon** gas, by removing ammonia from the **synthesis gas** prior to passing the **synthesis gas** to a **Fischer-Tropsch** reactor. A process flow diagram is presented.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:7599 CAPLUS

DOCUMENT NUMBER: 134:58950

TITLE: Extended catalyst life in a two-stage **Fischer-Tropsch hydrocarbon** synthesis process

INVENTOR(S): Beer, Gary L.

PATENT ASSIGNEE(S): Syntroleum Corporation, USA

SOURCE: U.S., 5 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6169120	B1	20010102	US 1999-397474	19990917
PRIORITY APPLN. INFO.:			US 1999-397474	19990917

AB An extended catalyst life two-stage **hydrocarbon** synthesis process is presented where a first **synthesis gas** stream is reacted in a first-stage reactor in the presence of a suitable catalyst (e.g., Co/alumina) to produce liquid **hydrocarbon** products and a gaseous stream; the gaseous stream is cooled and water and liquid **hydrocarbons** are separated from the gaseous stream to produce a second **synthesis gas** stream which is then passed to a second stage reactor for the production of addnl. liquid **hydrocarbons**.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:189030 CAPLUS

DOCUMENT NUMBER: 128:232567

TITLE: Effects of different promoters on Fe/AlPO<sub>4</sub>-5 catalysts in CO hydrogenation

AUTHOR(S): Fan, Bin-Bin; Ma, Jing-Hong; Li, Rui-Feng; Cao, Jing-Hui

CORPORATE SOURCE: Institute of Special Chemicals, Taiyuan University of Technology, Taiyuan, 030024, Peop. Rep. China

SOURCE: Journal of Natural Gas Chemistry (1998), 7(1), 74-79  
CODEN: JGCHE8; ISSN: 1003-9953

PUBLISHER: Chengdu Institute of Organic Chemistry, Academia Sinica

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The influences of rare earth oxides, alloy and ZrO<sub>2</sub> on AlPO<sub>4</sub>-5 support and Fe/AlPO<sub>4</sub>-5 catalyst were investigated. The following observations were made: (1) La, Ce or Y oxide were promoters for the Fe/AlPO<sub>4</sub>-5 catalyst (as prepared in a non-aqueous acetone solution of iron nitrate) in CO hydrogenation; (2) AlPO<sub>4</sub>-5 supported alloy-metal catalysts gave significantly different catalytic results; (3) ZrO<sub>2</sub> modified the surface properties of AlPO<sub>4</sub>-5, weakened the interaction between active component and AlPO<sub>4</sub>-5 support, and resulted in the catalyst (as prepared in a water solution of iron nitrate) exhibit catalytic activity in **synthesis gas**

conversion.  
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:4602 CAPLUS

DOCUMENT NUMBER: 128:37019

TITLE: Long-chain **hydrocarbons** from syngas on  
nano-sized **cobalt**-based catalysts. Effect of  
**chromium promoter**

AUTHOR(S): Zhang, Yongqing; Zhong, Bing; Wang, Qin

CORPORATE SOURCE: State Key Lab. Coal Conversion, Shanxi Inst. Coal  
Chem., The Chinese Acad. Sci., Taiyuan, 030001, Peop.  
Rep. China

SOURCE: Cuihua Xuebao (1997), 18(6), 513-516

CODEN: THHPD3; ISSN: 0253-9837

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB It is concluded from our previous work that fine-particle ZrO<sub>2</sub>-SiO<sub>2</sub>  
supported Co catalyst is very suitable for synthesis of long-chain  
**hydrocarbons** by **Fischer-Tropsch** process. C<sub>5</sub>+  
yield on the catalyst could reach 150 g/m<sup>3</sup> with  $\alpha = 0.94$ . In this  
paper, the promotion effect of Cr on this catalyst is investigated. The  
results indicate that the addition of Cr debases the texture of Co/ZrO<sub>2</sub>-SiO<sub>2</sub>.  
CoCr<sub>2</sub>O<sub>4</sub> solid solution is formed during reduction Therefore Co-Cr/ZrO<sub>2</sub>-SiO<sub>2</sub> is  
much more difficult to be reduced. Addition of Cr decreases the CO  
conversion rate and C<sub>5</sub>+ selectivity with increase in CH<sub>4</sub> selectivity.

L3 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:701597 CAPLUS

DOCUMENT NUMBER: 125:333915

TITLE: **Fischer-Tropsch** catalysts  
containing iron and **cobalt**

INVENTOR(S): Espinoza, Rafael Luis; Visagie, Jacobus Lucas; Van  
Berge, Peter Jacobus; Bolder, Frandiscus Hermanus

PATENT ASSIGNEE(S): Sastech Proprietary Ltd., S. Afr.

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 736326	A1	19961009	EP 1996-302437	19960404
EP 736326	B1	20010808		
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
US 5733839	A	19980331	US 1996-631658	19960402
NO 9601387	A	19961008	NO 1996-1387	19960403
NO 313622	B1	20021104		
ZA 9602759	A	19961007	ZA 1996-2759	19960404
CA 2173515	AA	19961008	CA 1996-2173515	19960404
CA 2173515	C	20000523		
AU 9650500	A1	19961017	AU 1996-50500	19960404
AU 694010	B2	19980709		
AT 203929	E	20010815	AT 1996-302437	19960404
ES 2160211	T3	20011101	ES 1996-302437	19960404
PT 736326	T	20011228	PT 1996-302437	19960404
RU 2165789	C2	20010427	RU 1996-107411	19960405
GR 3036807	T3	20020131	GR 2001-401670	20011004
PRIORITY APPLN. INFO.:			ZA 1995-2903	A 19950407

AB A process for preparing a **Fischer-Tropsch** catalyst  
comprises subjecting a slurry comprising a particulate alumina carrier,  
water and an active component selected from the group consisting of  
**cobalt**, iron and mixts. thereof, to a subatm. pressure

environment. The alumina carrier is thereby impregnated with the active component. The impregnated carrier is dried under a subatm. pressure environment. The dried impregnated carrier is calcined, thereby to obtain the **Fischer-Tropsch** catalyst.

L3 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:510714 CAPLUS  
DOCUMENT NUMBER: 122:243688  
TITLE: Conversion of **synthesis gas** into liquid **hydrocarbons**: effect of the support and promoters (La, Ce and Mn) on **cobalt** catalysts  
AUTHOR(S): Barrault, Joel; Biwole, nazaire  
CORPORATE SOURCE: Laboratoire de Catalyse, ESIP, Poitiers, 86022, Fr.  
SOURCE: Bulletin des Societes Chimiques Belges (1995), 104(3), 149-53  
CODEN: BSCBAG; ISSN: 0037-9646  
PUBLISHER: Societe Chimique Belges  
DOCUMENT TYPE: Journal  
LANGUAGE: French

AB The **Fischer-Tropsch** reaction to liquid **hydrocarbons** was carried out on **cobalt** catalysts modified by Ce, La, and Mn, and supported on oxidized carbon. Addition of Ce to Co increases the selectivity to the C5-11 fraction whereas addition of Mn increases the selectivity to the C12-25 fraction.

L3 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:606885 CAPLUS  
DOCUMENT NUMBER: 119:206885  
TITLE: Praseodymium-containing **cobalt** catalysts for the **Fischer-Tropsch** process  
INVENTOR(S): Bessell, Sandra; Chaffee, Alan Loyd  
PATENT ASSIGNEE(S): Broken Hill Proprietary Co. Ltd., Australia  
SOURCE: PCT Int. Appl., 26 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9315836	A1	19930819	WO 1993-AU67	19930218
W: AU, CA, GB, NZ, US				
AU 9334870	A1	19930903	AU 1993-34870	19930218
PRIORITY APPLN. INFO.:			AU 1992-941	A 19920218
			WO 1993-AU67	A 19930218

AB A **Fischer-Tropsch** catalyst comprising Co and Pr supported on a ZSM-5 zeolite is prepared by impregnating the zeolite with a Pr salt and a solution of a **cobalt** carbonyl in an organic solvent, such as di-Me ether, evaporating the solvent and calcining the catalyst. The process for making liquid **hydrocarbons** involves passing a **synthesis gas** over the catalyst at 200-300°. The catalyst has increased activity and higher **hydrocarbon** production

L3 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:432469 CAPLUS  
DOCUMENT NUMBER: 115:32469  
TITLE: Catalyst for conversion of **synthesis gas** into **hydrocarbons**  
INVENTOR(S): Bessell, Sandra  
PATENT ASSIGNEE(S): Australia  
SOURCE: Can. Pat. Appl., 19 pp.  
CODEN: CPXXEB  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2025101	AA	19910312	CA 1990-2025101	19900911
AU 9062238	A1	19910314	AU 1990-62238	19900907
AU 638741	B2	19930708		
GB 2236262	A1	19910403	GB 1990-19721	19900910
GB 2236262	B2	19940420		
US 5126377	A	19920630	US 1990-579637	19900910

PRIORITY APPLN. INFO.: AU 1989-6288 A 19890911

AB Catalyst composition comprising Co supported on a zeolite of the ZSM 5 family and addnl. containing Cr is useful for the conversion of **synthesis gas** into **hydrocarbons**, e.g., gasoline fractions.

L3 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:162065 CAPLUS

DOCUMENT NUMBER: 112:162065

TITLE: Catalyst for production of **hydrocarbons**

INVENTOR(S): Eri, Sigrid; Goodwin, James G., Jr.; Marcelin, George; Riis, Trygve

PATENT ASSIGNEE(S): Den Norske Stats Oljeselskap A/S, Norway

SOURCE: U.S., 12 pp. Cont.-in-part of U.S. 4,801,573.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4880763	A	19891114	US 1988-259232	19881018
US 4801573	A	19890131	US 1987-113095	19871023

PRIORITY APPLN. INFO.: US 1987-113095 A2 19871023

AB A catalyst for converting **synthesis gas** to **hydrocarbons** includes .ltorsim.60 weight% Co of the catalyst, 0.5-50 weight% Re of the Co content of the catalyst and an alkali in amts. of 0.5-5 atom % of the Co content of the catalyst, supported on alumina. A metal oxide promoter may be added.

L3 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1989:500037 CAPLUS

DOCUMENT NUMBER: 111:100037

TITLE: Diffusion limitations in **Fischer-Tropsch** catalysts

AUTHOR(S): Post, M. F. M.; Van't Hoog, A. C.; Minderhoud, J. K.; Sie, S. T.

CORPORATE SOURCE: K./Shell-Lab., Amsterdam, 1031 CM, Neth.

SOURCE: AIChE Journal (1989), 35(7), 1107-14  
CODEN: AICEAC; ISSN: 0001-1541

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The extent of diffusion limitations in the catalytic conversion of **synthesis gas** to **hydrocarbons** by the **Fischer-Tropsch** reaction was established for a number of Fe- and Co-based catalysts. The studies were performed in a fixed-bed microreactor system at 473-523 K. Variation of catalyst particle size in the 0.2-2.6 mm range shows that the conversion of **synthesis gas** decreases considerably when the average particle size is increased. The effects of particle size variation and pore diameter were quantified with the Thiele model for diffusion limitations. Evidence accumulated that the limited mobility of reactant mols. in the liquid-filled pores of **Fischer-Tropsch** catalysts is the main cause of retardation of the reaction rates. The exptl. determined reaction rates with various catalysts operated under different conditions show an excellent fit with the theor. model.

L3 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1989:196214 CAPLUS

DOCUMENT NUMBER: 110:196214  
 TITLE: **Fischer-Tropsch** catalyst  
 containing **cobalt** and rhenium for production  
 of **hydrocarbons**  
 INVENTOR(S): Eri, Sigrid; Goodwin, James G., Jr.; Marcelin, George;  
 Riis, Trygve  
 PATENT ASSIGNEE(S): Den Norske Stats Oljeselskap A/S, Norway  
 SOURCE: U.S., 10 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4801573	A	19890131	US 1987-113095	19871023
US 4857559	A	19890815	US 1988-259221	19881018
US 4880763	A	19891114	US 1988-259232	19881018
DK 8805864	A	19890424	DK 1988-5864	19881021
DK 172976	B1	19991101		
NO 8804684	A	19890424	NO 1988-4684	19881021
NO 178958	B	19960401		
NO 178958	C	19960710		
EP 313375	A2	19890426	EP 1988-309904	19881021
EP 313375	A3	19891011		
EP 313375	B1	19930804		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 92454	E	19930815	AT 1988-309904	19881021
CA 1329190	A1	19940503	CA 1988-580935	19881021
WO 8903725	A1	19890505	WO 1988-NO81	19881024
W: AU, BR, FI, JP, KR				
AU 8825446	A1	19890523	AU 1988-25446	19881024
AU 616700	B2	19911107		
CN 1033755	A	19890712	CN 1988-107330	19881024
CN 1020678	B	19930519		
BR 8807760	A	19900807	BR 1988-7760	19881024
JP 03502067	T2	19910516	JP 1988-508299	19881024
CN 1058010	A	19920122	CN 1991-104473	19881024
CN 1025606	B	19940810		
RU 2017517	C1	19940815	RU 1988-4356964	19881024
CA 2007143	AA	19910704	CA 1990-2007143	19900104
CA 2007143	C	19950221		
FI 92911	B	19941014	FI 1990-2043	19900423
FI 92911	C	19950125		
LT 4002	B	19960625	LT 1993-1530	19931206
PRIORITY APPLN. INFO.:				
			US 1987-113095	A2 19871023
			EP 1988-309904	A 19881021
			CN 1988-107330	A 19881024
			WO 1988-NO81	A 19881024

AB The catalyst includes «60 weight% Co and 0.5-50 weight% Re supported on alumina; a metal oxide promoter may be added. The catalyst is significantly more active than either of the 2 individual metals supported on alumina or the combination of the 2 metals deposited on other inorg. supports. Thus, **synthesis gas** containing 33 volume% CO and 67 volume% H was passed over a catalyst containing Co 12, Re 1.0, and rare earth oxide 1.0 weight%, resulting in CO conversion 33, C2+ selectivity 87.7, CH4 selectivity 11.4, and CO2 selectivity 0.9%.